

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

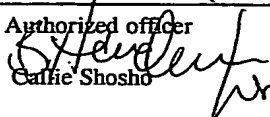
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|  |  |   |                       |
|--|--|---|-----------------------|
| Applicant's or agent's file reference<br>STYL0162PCT   | <b>FOR FURTHER ACTION</b>  |   | See Form PCT/IPEA/416 |
| International application No.<br>PCT/US04/00385  | International filing date (day/month/year)<br>09 January 2004 (09.01.2004) | Priority date (day/month/year)<br>09 January 2003 (09.01.2003)  |                       |
| International Patent Classification (IPC) or national classification and IPC<br>IPC(7): C09D 11/16; C08L 25/08, 19/00, 21/00 and US Cl.: 523/161; 524/577  |  |   |                       |
| Applicant<br>ADVANCED WATCH COMPANY, LTD.  |  |   |                       |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>4</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> |  |   |                       |
| Date of submission of the demand<br>05 November 2004 (05.11.2004)  |  | Date of completion of this report<br>29 December 2004 (29.12.2004)  |                       |
| Name and mailing address of the IPEA/ US<br>Mail Stop PCT, Attn: IPEA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450<br>Facsimile No. (703) 305-3230   |  | Authorized officer<br><br>Carrie Shosho<br>Telephone No. 571-272-1700 |                       |

Form PCT/IPEA/409 (cover sheet)(January 2004)

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## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US04/00385

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1-13 as originally filed/furnished

pages\* NONE received by this Authority on \_\_\_\_\_

pages\* NONE received by this Authority on \_\_\_\_\_

☒ the claims:

pages 15 and 16 as originally filed/furnished

pages\* NONE as amended (together with any statement) under Article 19

pages\* 14 and 17-19 received by this Authority on 05 November 2004 (05.11.2004)

pages\* NONE received by this Authority on \_\_\_\_\_

☐ the drawings:

pages NONE as originally filed/furnished

pages\* NONE received by this Authority on \_\_\_\_\_

pages\* NONE received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.  
PCT/US04/00385**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

|                               |                    |     |
|-------------------------------|--------------------|-----|
| Novelty (N)                   | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |
| Inventive Step (IS)           | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |
| Industrial Applicability (IA) | Claims <u>1-30</u> | YES |
|                               | Claims <u>NONE</u> | NO  |

**2. Citations and Explanations (Rule 70.7)**

1. Claims 1-30 meet the criteria set out in PCT Article 33(2)-(3), because the "closest" prior art, namely, Daugherty et al. (U.S. 4,738,725) and Brenneman et al. (U.S. 4,721,739), does not teach or fairly suggest the present invention.

Specifically, Daugherty et al. disclose erasable ink for ball point pen wherein the ink comprises elastomer including blocks obtained from styrene and isoprene, pigment, cyclohexane, ethyl acetate (organic ester), mineral oil, and dioctyl phthalate. Brenneman et al. disclose erasable ink for ball point pen wherein the ink comprises 0.1-60% pigment such as carbon black, 8-30% thermoplastic elastomer including that obtained from styrene and isoprene, 10-35% plasticizer or mixtures of plasticizers wherein the plasticizers include dioctyl phthalate and dibutyl phthalate, 10-40% solvent that comprises cyclohexane and esters, and corrosion inhibitor.

However, there is no disclosure in either Daugherty et al. or Brenneman et al. of (i) erasable ink comprising solvent system including isobutyl butyrate as required in each of claim 1 and claim 27 or (ii) erasable ink comprising pigment comprising graphite and carbon black as required in each of claim 21 and claim 27.

2. Claims 1-30 meet the criteria set out in PCT Article 33(4), and thus the invention has industrial applicability because the subject matter claimed can be made or used in industry and further, the invention has industrial applicability as ink for writing instrument.

----- NEW CITATIONS -----

## WHAT IS CLAIMED IS:

1. An erasable ink composition comprising:  
a solvent system including:  
a component selected from the group consisting of an optionally  
5 substituted cycloalkane, an optionally substituted cycloalkene, an optionally  
substituted cycloalkanone, and mixtures thereof; and  
isobutyl butyrate;  
a rubber; and  
a pigment;  
10 the solvent system present in a sufficient amount that the erasable ink composition  
will flow in a writing implement.
2. The erasable ink composition of claim 1 wherein the pigment  
is graphite powder, carbon black powder, or mixture thereof.  
15
3. The erasable ink composition of claim 1 wherein the pigment  
is present in an amount of 2% to 25% of the total weight of the erasable ink  
composition.
4. The erasable ink composition of claim 1 wherein a sufficient  
20 amount of the solvent system is present so that the erasable ink composition has a  
viscosity from 20,000 cP to 60,000 cP at 25 °C.
5. The erasable ink composition of claim 1 wherein the solvent  
system comprises a component selected from the group consisting of an optionally  
substituted cycloalkane having a 4 to 7 member ring, an optionally substituted  
25 cycloalkanone having a 4 to 7 member ring, an optionally substituted cycloalkene  
having a 4 to 7 member ring, and mixtures thereof; and an organic ester.

dioctyl phthalate in an amount of 60% to 90% of the total weight of the phthalic ester mixture.

21. An erasable ink composition comprising:  
a solvent system including:  
5 a component selected from the group consisting of an optionally substituted cycloalkane, an optionally substituted cycloalkene, an optionally substituted cycloalkanone, and mixtures thereof; and  
an organic ester;  
at least one phthalic ester selected from the group consisting a dibutyl  
10 phthalate, dioctyl phthalate, and mixtures thereof;  
a rubber;  
an additive selected from the group consisting of a corrosion inhibitor, a flow enhancing compound, and mixtures thereof;  
a liquid butene polymer; and  
15 a pigment comprising graphite and carbon black.

22. The erasable ink composition of claim 21 wherein the solvent system present in a sufficient amount that the erasable ink composition will flow in a writing implement and the erasable ink composition has a viscosity from 20,000 cP to 60,000 cP at 25 °C.

- 20 23. The erasable ink composition of claim 21 wherein the solvent system comprises a component selected from the group consisting of an optionally substituted cycloalkane having a 4 to 7 member ring, an optionally substituted cycloalkanone having a 4 to 7 member ring, an optionally substituted cycloalkene having a 4 to 7 member ring, and mixtures thereof; and an organic ester.

- 25 24. The erasable ink composition of claim 21 wherein the solvent system comprises:  
a component selected from the group consisting of cyclohexane, cyclohexanone, and mixtures thereof; and  
isobutyl butyrate.

25. The erasable ink composition of claim 21 wherein the solvent system is present in an amount of 25% to 55% of the total weight of the erasable ink composition.

26. The erasable ink composition of claim 21 wherein the graphite is present in an amount of about 2% to about 20% of the total weight of the erasable ink composition and the carbon black is present in an amount of about 2% to about 20% of the total weight of the erasable ink composition.

27. An erasable ink composition comprising:  
 a solvent system including:  
 cyclohexane present in an amount from about 40% to about 80% of the total weight of the solvent system; and  
 isobutyl butyrate present in an amount from about 20% to about 60% of the total weight of the solvent system;  
 at least one phthalic ester selected from the group consisting a dibutyl phthalate, dioctyl phthalate, and mixtures thereof;  
 a rubber;  
 an additive selected from the group consisting of a corrosion inhibitor, a flow enhancing compound, and mixtures thereof;  
 a liquid butene polymer; and  
 a pigment comprising graphite and carbon black;  
 the solvent system present in a sufficient amount that the erasable ink composition will flow in a writing implement and the erasable ink composition has a viscosity from 20,000 cP to 60,000 cP at 25 °C.

28. The erasable ink composition of claim 27 wherein the at least one phthalic ester is present in an amount of 3% to 25% of the total weight of the erasable ink composition.

29. The erasable ink composition of claim 27 wherein the at least one phthalic ester is a phthalic ester mixture comprising:

dibutyl phthalate in an amount of 10% to 40% of the total weight of the phthalic ester mixture; and

dioctyl phthalate in an amount of 60% to 90% of the total weight of the phthalic ester mixture.

- 5                    30.    The erasable ink composition of claim 27 wherein the solvent system is present in an amount of 25% to 55% of the total weight of the erasable ink composition.